CLAIMS:

1. A master substrate comprising a substrate layer (10) and a recording stack deposited on the substrate layer, the recording stack comprising:
- an information layer (12),
- an interface layer (11) sandwiched between said information layer and the substrate,
said information layer (12) comprising a growth-dominated phase-change material for forming marks and spaces representing an encoded data pattern, wherein said recording material is an alloy comprising at least two materials of the group of materials containing Ge, Sb, Te, In, Se, Bi, Ag, Ga, Sn, Pb, As.

2. A master substrate as claimed in claim 1, wherein said recording material is a Sb-Te alloy material, in particular Sb_2Te doped with Ge and In.

3. A master substrate as claimed in claim 1, wherein said recording material is a Sn-Ge-Sb-alloy material, in particular with the composition $Sn_{18.3}$ - $Ge_{12.6}$ - $Sb_{69.2}$.

4. A master substrate as claimed in claim 1, wherein said information layer (12) has a thickness in the range from 2 nm to 100 nm, preferred range 1 ranges between 5 and 40 nm, preferred range 2 ranges between 45 and 70 nm.

5. A master substrate as claimed in claim 1, wherein said interface layer (11) is made of a material of the group of dielectric materials containing ZnS-SiO_2, Al_2O_3, SiO_2, Si_3N_4.

6. A master substrate as claimed in claim 1, wherein said interface layer (11) comprises at least one organic dye selected from the group phthalo-cyanine, cyanine and AZO dyes.

7. A master substrate as claimed in claim 1, wherein said interface layer (11) comprises an organic layer selected from the group UV-cured organic materials, preferably hexandioldiacrylate (HDDA).

8. A master substrate as claimed in claim 1, wherein said interface layer (11) has a thickness in the range from 5 nm to 100 nm, in particular between 20 and 70 nm.

9. A master substrate as claimed in claim 1, wherein the recording stack further comprises a protection layer (81) adjacent the information layer (12) at a side most remote from the substrate.

10. A master substrate as claimed in claim 9, wherein said protection layer (81) has a thickness between 2 and 50 nm, in particular between 5 and 30 nm.

11. A master substrate as claimed in claim 9, wherein said protection layer (81) is made of the group materials containing ZnS-SiO_2, Al_2O_3, SiO_2, Si_3N_4, Ta_2O, SiC.

12. A master substrate as claimed in claim 9, wherein said protection layer (81) comprises an organic material, in particular selected from the group Diazonaphthoquinone-based photoresists or from the group soluble organic materials, like PMMA.

13. A master substrate as claimed in claim 1 or 9, wherein the recording stack further comprises a second interface layer (82) between said substrate layer and said interface layer (11).

14. A master substrate as claimed in claim 13, wherein said second interface layer (82) has a thickness between 10 and 100 nm, preferably between 15 and 50 nm.

15. A master substrate as claimed in claim 1, 9 or 13, wherein a metal heat sink layer (83) is present between said substrate layer and said interface layer (11) or interface layer (82).

16. A master substrate as claimed in claim 15, wherein said metal heat sink layer (83) has a thickness larger than 5 nm, in particular larger than 15 nm.

17. A master substrate as claimed in claim 15, wherein said metal heat sink layers (83) comprises a material selected from the group of materials Al, Ag, Cu, Ag, Ir, Mo, Rh, Pt, Ni, Os, W and alloys thereof.

18. A method of manufacturing a stamper for replicating a high-density relief structure comprising at least the steps of
- illuminating a master substrate as claimed in any one of claims 1 -17 with a modulated focused radiation beam,
- rinsing the illuminated master substrate layer with a developer, being one of an alkaline or an acid liquid, preferably selected of the group of solutions of NaOH, KOH, HCL and HNO3 in water, such that a desired relief structure results,
- sputter-deposition of a metallic layer, in particular a Nickel layer,
- galvanically growing the sputter-deposited layer to the desired thickness forming a stamper,
- separating the master substrate from the stamper.

19. A method as claimed in claim 18 using a master substrate as claimed in claims 1, 9, 13 or 15, the information layer (12) having a thickness in the range 5-35 nm wherein a pre-grooved shaped relief structure is formed for replication of write-once and rewritable optical discs.

20. A method as claimed in any one of claims 18 - 19, in which the developer solution is used in a concentration 1-30%, preferably between 2 and 20%.

21. A pre-recorded optical disc replicated with the stamper manufactured with the method of any one of claims 18, 19 or 20, characterized in that the relief structure on the stamper surface comprises shortest pits having a typical crescent and longer pits having a swallow-shaped trailing edge and that the relief structure is replicated in the optical disc.